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State of Utah
DEPARTMENT OF NATURAL RESOURCES
Division of Oil, Gas & Mining

MICHAEL R. STYLER
Executive Director
JOHN R. BAZA
Division Director

Inspection Report

Supervisor RR7

Minerals Regulatory Program

Date of Report: October 24, 2007

Mine Name: Cane Creek
Operator Name: Intrepid Potash

Permit number: M0190005
Inspection Date: September 25,
2007
Time: 8:00 to 11:00 AM

Inspector(s): Paul Baker
Other Participants: Kevin Harmison (Intrepid)
Mine Status: Active

Weather: Clear, 60s

Elements of Inspection

	Evaluated	Comment	Enforcement
1. Permits, Revisions, Transfer, Bonds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Public Safety (shafts, adits, trash, signs, highwalls)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Protection of Drainages / Erosion Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Deleterious Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Roads (maintenance, surfacing, dust control, safety)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Concurrent Reclamation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Backfilling/Grading (trenches, pits, roads, highwalls, shafts, drill holes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Water Impoundments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Revegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Air Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Purpose of Inspection:

My primary purpose was to look at the revegetation test plots, but we also drove around the evaporation ponds and to the cutoff dams that catch water seeping from the ponds.

Inspection Summary:

10. Revegetation

There are three sets of test plots:

1. Control plot (Photo 1). This is near the salt tailings pond, but the soil has not been affected by salt. An alluvial gravel soil was placed over the native soil, and the dominant vegetation is cheatgrass and halogeton with some Russian thistle, galleta, globemallow, blue grama, sand dropseed, and purple three-awn.
2. Salt tailings pond plots. There are four plots, one of which has not yet been planted. One has three feet of alluvial gravel soil, one has two feet of this soil, one was irrigated for a year to leach the salts and was then seeded, and the other is being leached and should be seeded this fall. The plot that was leached then planted (Photo 2) has no vegetation and has some salt on the surface. The plots with three and two feet of soil (Photos 3 and 4) have a fair amount of desirable vegetation, but they also have some weeds. Desirable plants growing on these plots include purple three-awn, sand dropseed, blue grama, galleta, scarlet globemallow, and an unidentified grass (Photo 5). (It would be good to identify this grass since it was fairly common.) There

were also weeds, but not nearly as many as in the control plot. The plot with three feet of borrow material had more desirable vegetation than the plot with two feet, but the difference is probably not significant. I was impressed with the number of warm-season grasses in these areas: warm-season grasses are often difficult to establish in reclaimed areas.

3. Plots near the wells. Soils at both of these sites were affected by salts. The plot near well 4 was irrigated but not furrowed. I did not see any plants growing from the seeding, but I did find one plant of Castle Valley clover. There were very few weeds. The other plot was ridged, and although there were not a lot of desirable plants, we did find Castle Valley clover and sand dropseed. There was a lot of halogeton and Russian thistle with lesser amounts of malcomia and cheatgrass. In these plots, it did appear that salt had concentrated on the furrow peaks as intended. Some of the soil (sand) washed into the furrows.

Conclusions and Recommendations:

At this time, it does not appear that leaching salts from the salt tailings pond soils has been effective. I would like to reserve final judgment until I have seen the results from the plot that has been irrigated for two years. When the plot irrigated for two years is planted, I suggest that it be left as rough as possible, possibly furrowed. The furrowed plot showed some success in concentrating salts on the furrow peaks.

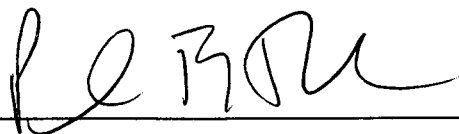
It is possible the soil used for the control plot had a large bank of cheatgrass seeds and that this is why so much cheatgrass is growing in this plot. I wondered if this material came from the surface of a borrow area and if material from lower in the profile was used for the plots at the salt tailings pond where there was less cheatgrass.

It is too early to judge whether there is a difference between two feet and three feet of borrow material over salt-affected soils. Vegetation cover should be measured and compared after another year or two.

Furrows seem to positively affect the amount of vegetation on salt-affected soils, and I suggest the operator consider furrowing and re-planting the plot near well 4.

I did not see any problems at any of the other areas of the mine we visited.

Inspector's Signature



Date:



Inspector's initials:pb

cc: Rick Klein, Intrepid
Will Stokes, SITLA

Attachment: Photos

ATTACHMENT

Photographs

M0190005, Cane Creek Mine, Intrepid Potash

Inspection Dated: September 25, 2007; Report Dated: October 24, 2007



Photo 1. The control plot. Most of the plants are cheatgrass and halogeton.

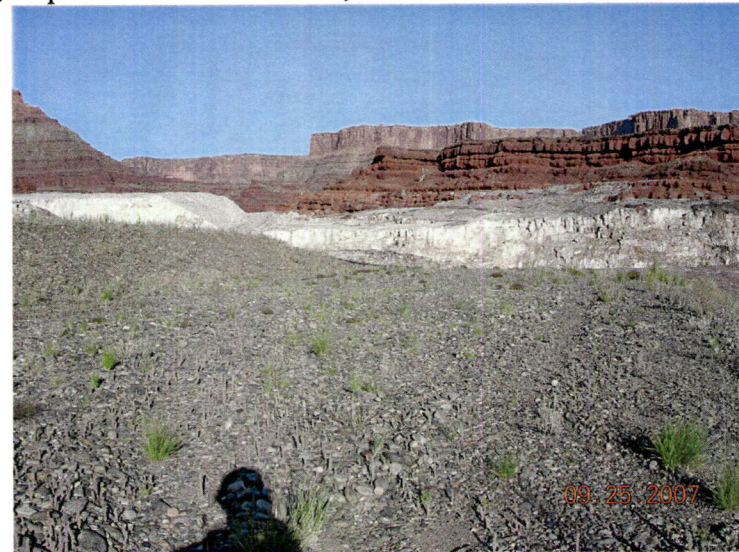


Photo 3. This plot is in the salt tailings pond area and has three feet of growth medium.



Photo 2. This plot in the salt tailings pond area was irrigated for one year then seeded.

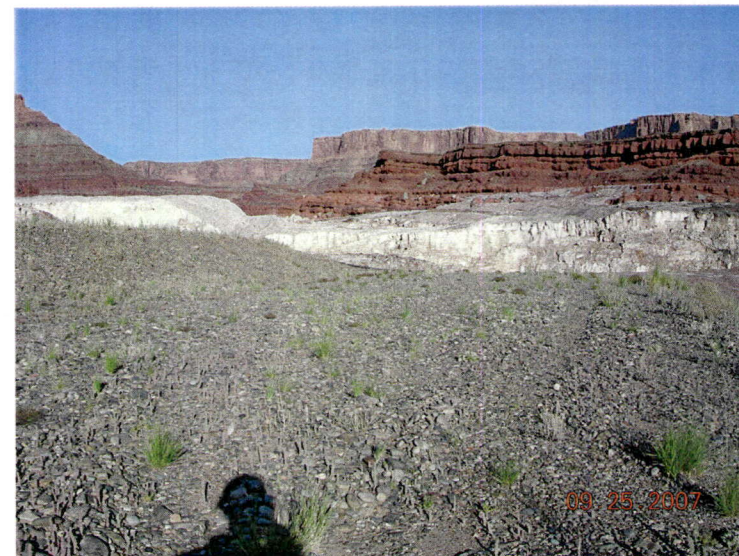


Photo 4. Similar to the plot shown in Photo 3, but only two feet of growth medium was used.



Photo 5. An unidentified grass in the plots with borrow material.

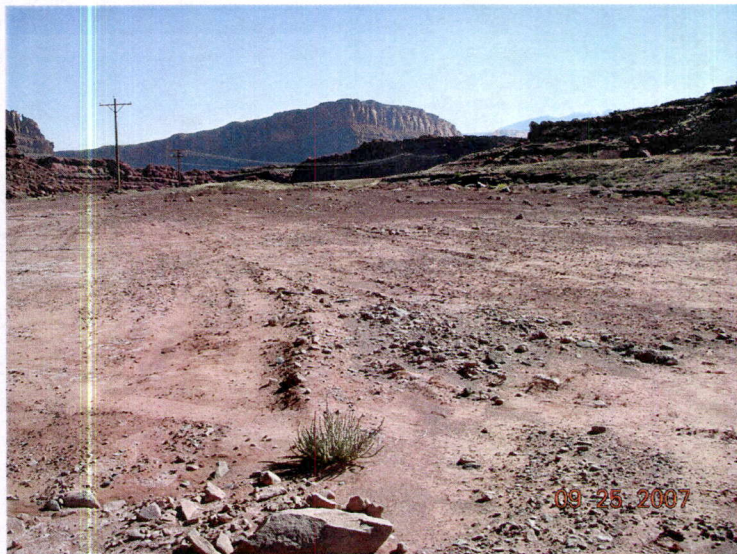


Photo 6. The plot by well 4.



Photo 7. The plot by another well. The soil was furrowed, and most of the vegetation is halogeton.



Photo 8. Castle Valley clover growing in the furrowed plot. There were a few, but not too many, desirable species.

Mine Number: S01900063
Mine Name: H and B MINE
Township 22 S Range 19 E Section 14 SLBM

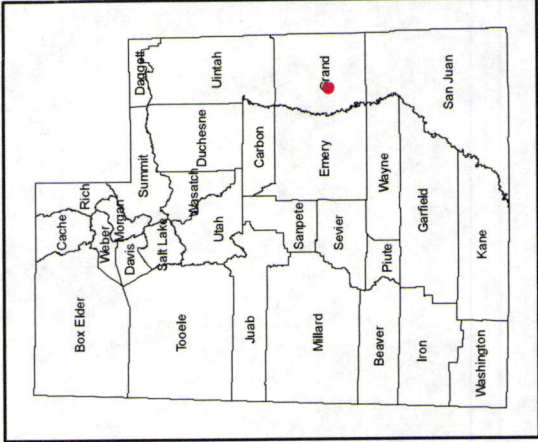
Inspection Date Sept. 25, 2007
Map Produced by DKS

Acres Disturbed	1.29
Acres Regraded	0
Acres Seeded	0
Road Acres Disturbed	0
Total Acres Disturbed	1.29
Acres Released	0
Acres Excluded	0
Acres PreExisting	0
Acres Prelaw	0

Legend
All items symbolized in legend may not be appear on map

- | | |
|-----------------|---|
| County Boundary | Township or range line |
| Access | Township or range line: location doubtful |
| Mine | Section line |
| NonMine | Section line: location doubtful |
| Reclaimed | Disturbed |
| Other | Regraded |
| Interstate | Seeded |
| US Route | Released |
| State Route | Excluded |
| Primary Route | PreExisting |
| Secondary Route | Prelaw |
| Main Dirt Road | Bond Area |
| Unimproved Road | SITLA Mineral Leases |
| Interchange | BLM Salable Minerals |
| Trail | Community Pit |
| | SITLA Mineral Ownership |

NAIP imagery date 2006



0 625 Feet
1:7,500 1 inch equals 625 feet
Verify Scale

Dept. of Natural Resources
Division of Oil, Gas, and Mining
Mineral Mines Program

Different data sources and input scales
may cause misalignment of data layers.
This product may not meet DOGM
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